

FOUR NEW NEOTROPICAL REDUVIIDAE

(HEMIPTERA)

BY ROLAND F. HUSSEY, *University of Florida, Gainesville*

The present paper deals with three reduviine and one ectrichodiine species, the types of which are in the collection of the Museum of Zoology, University of Michigan, Ann Arbor. My sincere thanks are due to Dr. J. Speed Rogers, Director, and Dr. Theodore H. Hubbell, Curator of Insects, for the privilege of studying the Hemiptera of that collection, and of describing these new forms. I am indebted to Mr. William L. Brudon, artist in the Museum of Zoology, University of Michigan, for the figures of two of the new species.

As in other recent papers, I have expressed all comparative measurements here in hundredths of a millimeter.

***Leogorrus insculptus*, new species**

Female.—Length 11.2 mm., width of pronotum 3.2 mm.

Black, rather strongly shining, sparsely shortly setulose on the head, thorax, and veins of the corium; femora and tibiae with somewhat longer but rather remote erect hairs, the front femora beneath with several rows of long golden hairs, all the tibiae with dense pilosity on their inner (ventral) sides toward the tips; antennae with short oblique setae on the first two segments, the third segment pale, with longer setae, the fourth missing. Hemelytra matt, black, marked with yellow as follows: an abbreviated subquadrate fascia just before the apex of the corium, extending onto the membrane and narrowly invading the outer side of the apical cell, a slightly smaller spot on the inner margin of the membrane opposite this abbreviated fascia, a spot at the apex of the apical cell of the membrane, narrowly extended backward along the apical veins as diverging pale streaks; extreme tip of the clavus and extreme basal portion of the inner margin of the membrane faintly yellowish.

Head, seen from above, a little shorter than the pronotum (220:253), twice as long as the width of its postocular portion, the latter slightly narrower than the width across the eyes (110:130), the ante-ocular length about one-third less than the post-ocular length including the neck (68:100). Eyes hardly prominent, only about one-third of their width lying laterad of the tumid post-ocular portion, their length in dorsal view four-fifths greater than their width (63:35) and equal to the minimum interocular width of the vertex. Vertex with a median longitudinal impression extending from the post-ocular transverse sulcus to the base of the tylus, this impression narrowed before the bases of the antenniferous tubercles and bounded on each side by a low carina; antenniferous tubercles somewhat oblique as seen from above, freely prominent. First antennal segment stout, curved; second segment somewhat thinner, with a short intercalary segment at its base; third segment

only half as thick as the second. Lengths of antennal segments I-III, 123:(18):200:78, fourth segment missing.

Pronotum one-fourth wider than long (320:255), the two lobes equally long, the anterior one three-tenths narrower than the posterior one (223:316), the anterior margin (including the prominent subnodose anterior angles) one-fourth wider than the head across the eyes (163:130). Interlobular transverse sulcus not interrupted; median longitudinal sulcus deepest just before the transverse sulcus, extended backward about to the middle of the posterior lobe. Posterior lobe with the entire surface minutely and closely etched with short, shallow but sharply angulate grooves running in all directions, but quite frequently arranged in minute stellate patterns that radiate outward from common centers. Anterior lobe with a submedian and two lateral sulci on each side which are broad, shallow and smooth, the outermost ones extending forward from the interlobular sulcus, each of the others terminating behind in a subquadrate smooth area on the hind margin of the anterior lobe, the ridges between these sulci etched and eroded like the posterior lobe, though more shallowly. Scutellum depressed on the disk, produced backward as a short, thick, horizontal spine, the entire scutellar surface (including the spine) very uneven.

Propleura almost smooth on the anterior lobe, the posterior lobe more or less horizontally rugulose; metapleura characteristic of the genus. Mesosternum destroyed in pinning the specimen; metasternum tectiform-carinate, the carina continuing onto the venter and becoming obsolete on the third ventral segment; venter smooth, strongly shining, with some remote erect hairs; first visible ventral incisure coarsely rugulose-punctate. Hind margins of ventral segments 3 to 6 concavely sinuate, the sixth most strongly so, the seventh segment longer on the middle line than the fifth and sixth combined (163:150), the other segments subequal in length. Hemelytra almost reaching the apex of the seventh tergite.

Front femora strongly incrassate, three times as long (on the ventral edge) as thick; fore tibiae gradually thickened from the base to the proximal end of the spongy fossa, the latter elongate-triangular, occupying about three-eighths of the length of the tibia (95:255). Middle tibia without a spongy fossa, but with a dense mat of long yellow hairs toward the apex.

Type.—Holotype, ♀, Los Santos, Guánico, Panamá, Sept. 15, 1925 (Fred. W. Walker).

The minutely intagliated surface of the posterior lobe of the pronotum and of the elevated ridges on the anterior lobe distinguishes this species from all others that have been described in the genus. As noted above, the etched grooves tend in many places to form strikingly stellate patterns, but in other areas they have a tendency to form abbreviated transverse series. The smooth sulci of the anterior lobe are as conspicuous (though not so deep) as those found in numerous species of *Sirthena* and *Rasahus*.

This species appears most nearly related to *Leogorrus formicarius* (Fabr.), which also has the transverse sulcus uninterrupted and the posterior lobe of the pronotum rugose, but *formicarius* is a much larger species with prominent eyes and is differently colored. *L. incommodus* (Walker) has the front lobe of the pronotum "very convex and with slight furrows," but this lobe is shorter than the posterior one, the legs are red, and the coloration is otherwise different.

Zelurus gagei, new species

Fig. 1

Female.—Length, 20.5 mm.; width between the bases of the humeral spines 4.35 mm., between their apices 5.66 mm.

General color yellowish. Head marked with black or piceous as follows: the narrow posterior margin and an abbreviated median longitudinal line on the vertex; the neck and post-ocular part of the head above and on the sides down to the level of the middle of the eye; lower part of the head before the eyes, the black color invading the lower part of the genae posteriorly. Tylus dark fuscous. Antennae entirely black; rostrum piceous, its first joint sordid flavo-testaceous.

Prothorax largely black, the discal spines of the anterior lobe and the humeral spines flavo-testaceous, the area between and in front of the discal spines yellowish; about one-fifth of the length of the pronotum occupied by a percurrent transverse yellow fascia, the yellow color extending forward a short distance along the lateral margins, the anterior margin of the fascia nearly straight, the posterior margin slightly invaded by fuscous at the intra-humeral impressions, beyond which it is directed outward and backward to the rear margin of the pronotum well behind the humeral spines, these latter situated somewhat behind the middle of the transverse fascia. Pleura piceous to black; all acetabula, coxae and trochanters yellowish, as also a vertically elongate spot near the anterior margin of the prothorax below, the upper part of the propleura, two large spots on the mesopleura, and the strigose area of the metapleura. Scutellum black, with a rounded, subcalloused, sordid yellowish area in each basal angle; scutellar spine entirely testaceous. Fore and middle legs testaceous or flavo-testaceous, the last tarsal segment darker. Hind legs largely black; extreme bases of the femur and the tibia yellow, as also a broad apical band occupying the distal fourth of the femur and another on the distal third of the tibia, that on the femur somewhat paler than the one on the tibia; entire hind tarsus dark, provided with yellow hairs.

Hemelytra brownish black. Corium with a large, very pale yellow spot extending inward from the costal margin to the base of the inner cell of the membrane, the hind margin of this spot becoming somewhat oblique inwardly; and at the same level the membrane inwardly bears a narrower, subtransverse testaceous marking which becomes paler and broader as it approaches the anal margin so as just to match in color

and extent the pale marking of the opposite hemelytron when the wings are at rest. Claval vein (contiguous to the claval suture) pale testaceous, joining anteriorly a rather broadly lunate area on the base of the clavus which is subcalloused, finely punctulate, obliquely declivous, and narrowly carinate on its inner (upper) edge next to the base of the scutellum. Cubital vein similarly (though less distinctly) paler than the

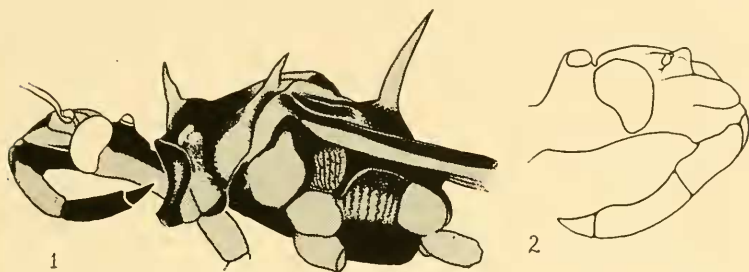


Fig. 1, *Zelurus gaigei*, new species, lateral view of head and thorax, to show the distribution of colors (stippled areas are yellowish in the type specimen); fig. 2, *Zelurus multicinctus*, new species, lateral view of head. Drawings by William L. Brudon.

disk of the corium, and joining anteriorly an obsolete yellowish spot near the base of the corium. Costal margin narrowly yellowish on the basal third, this marking somewhat wider anteriorly. Brownish-black color of the corium extended far backward onto the membrane, its margin convex behind, attaining the apex of the median cell and somewhat surpassing that level in the outer cell; apical part of the membrane lightly infuscated, separated from the dark brown portion by a rather wide, curved, colorless zone, the lightly infuscated apical part with two divergent pale-bordered veins arising from the apices of the two outer cells and extending more than half way to the apical margin of the membrane; a similar vein arises from the apex of the inner cell but is vestigial (0.1 mm. long) and is not bordered by pale color.

Venter flavous, each segment except the basal one transversely banded with black on the anterior margin, the black bands broadest near the lateral margin of the abdominal lobule, narrowed inwardly, those of the 3d to 5th segments interrupted at the middle by the mid-ventral carina, that of the 6th segment percurrent, joined at the middle line by a longitudinal black line which extends backward to the middle of the segment; 7th segment (♀) with an oblong fuscous spot at the middle of the front margin, and lightly infuscated toward the sides; fasciae of the other segments continued onto the lower fold of the (double) connexivum but not visible on upper fold of the latter.

Head as seen from above shorter than the pronotum (300:354), about one-half longer than its own width across the eyes (300:196); interocular width of the vertex greater than the width of an eye (72:65). Jugae

long and slender, parallel-sided, about three times as long as wide (53:18), very distinctly depressed below the level of the antenniferous tubercles. Genae rounded at the tips, not prominent. Lengths of antennal segments I-IV, 162:495:392:125 (the lengths of the last two segments approximate, as these are somewhat curved in the type specimen). Lengths of the rostral segments, 136:163:75.

Antero-lateral angles of the pronotal collar obtuse, only moderately prominent. All pronotal spines acute, the discal ones of the anterior lobe very little longer than the humeral spines (98:93), the latter nearly transverse, pointing outward and upward but scarcely directed backward. Scutellar spine stout, nearly vertical, its tip standing 1.41 mm. above the scutellar disk, 1.96 mm. above the apex of the scutellum. Anterior lobe of pronotum not very convex, provided with a median sulcus which becomes obsolete in front of the spines, and with two broad, shallow, somewhat oblique impressions at each side behind. Posterior lobe moderately declivous in front, rugose-punctate, most conspicuously so at each side of the median sulcus on its front portion. Costal margin of the hemelytra concave, the width across the hemelytra distinctly less at the base of the abdomen than at the sixth abdominal segment (370:480). Apex of the membrane surpassing the tip of the abdomen by about 2 millimeters.

Fore and middle femora with a few minute denticles beneath on the distal half, the middle ones also minutely denticulate toward the base; tibiae minutely serrulate on the basal half below. Spongy fossa of the fore tibia about one-fourth as long as the entire tibia (120:490), fossa of the middle tibia relatively shorter (103:517). All legs rather copiously pilose, the long hairs on the under side of the femora erect, those of the tibiae oblique.

Type.—Holotype, ♀, Santa Marta Mountains, Mt. San Lorenzo, 5600 feet, Colombia, June 14, 1920, swept from undergrowth in Vista Nieve Forest (F. M. Gaige).

It gives me great pleasure to name this species for its collector, who for many years was Director of the Museum of Zoology of the University of Michigan, under whose guidance I undertook my first studies in entomology.

This species belongs to the group typified by *Zelurus formosus* (Stål), and in the key to this group published by Lent and Wygodzinsky (1951, p. 2) it runs to the couplet containing *Z. formosus* and *Z. malaisei*. It is at once distinct from both these species in having the hind legs black, the femora and tibiae both very broadly banded with yellow on the distal part. The pale claval vein of the present species is another point of difference, as are also the coloration of the venter and (according to the descriptions) the presence of pale-bordered veins in the apical portion of the membrane, arising from the tips of the closed cells. The mid-ventral carina in the present species becomes evanescent at the middle of the fifth segment, and reappears before the middle of the seventh.

Zelurus multicinctus, new species

Fig. 2

Male.—Length, 11.8-11.9 mm.; width between the tips of the humeral spines 3.2-3.4 mm.; greatest width across the abdomen 3.7 mm.

Head yellowish, with a blackish stripe on each side before and behind the eye and with a narrow black mid-dorsal line extending forward from the base of the head to end in a black spot behind the ocelli; gula fuscous. Antennae fuscous; basal two-thirds of the first segment flavous, the second segment with a rather narrow yellow ring at the base and a wider one just beyond the middle. Third rostral segment and apical half of the second piceous.

Elevated ridges of the anterior pronotal lobe testaceous, separated by three darker smooth areas on each side which arise at the hind margin of the lobe and continue forward as sinuous stripes, the median ones bifurcate; collar yellowish at either side and broadly black at the middle, the black color continued onto the anterior lobe in front, narrowed between the discoidal spines, and extending as a median black line to the interlobular sulcus; discoidal spines flavous, their tips piceous. Posterior lobe flavo-testaceous, the disk with three fuscous vittae which are transversely connected before the hind margin, the outer ones ending anteriorly in rounded fuscous spots (in the paratype the outer vittae are obsolete, leaving only the pair of spots anteriorly and a median anchor-shaped fuscous mark whose shaft extends the entire length of the posterior lobe), the fuscous marks expanded postero-laterally to surround the bases of the humeral spines; humeral spines flavous, sometimes fuscous on the basal half, their tips not darkened. Scutellum black, the basal angles with a large yellow spot (almost concealed under the pronotum in one specimen), the terminal spine ochraceous, broadly banded with fuscous just beyond the middle.

Hemelytra dull brown, with a whitish or yellowish spot across the radial vein at the level of the scutellar spine, and a geminate pale spot across the same vein opposite the base of the inner cell of the membrane; the costal margin, the radial vein (except at base and apex), some of the outer veins of the membrane, and the claval suture (less distinctly) pale; middle and inner cells of the membrane with half a dozen or more rather large pale spots (some of them sometimes indistinct) arranged in a U-shaped pattern within each cell; apical part of the membrane paler beyond the closed cells, except for dark streaks along the veins.

Pleura largely piceous, the striate area of the mesothorax and all the acetabula flavous. Legs testaceous, the coxae marked with piceous; all femora tri-annulate with fuscous, the proximal band widest, the distal one narrowest, the bands of the fore and middle femora more or less interrupted on the antero-ventral side; tibiae with an ante-median and an apical fuscous band; tarsi infuscated only at the extreme tips. Venter piceous (the median carina narrowly testaceous on the basal segments in one specimen); yellow color of the connexivum slightly invading the ventral segments around the spiracles. Connexivum broadly banded with

fuscous, the dark color occupying slightly less than the posterior half of each segment and narrowly crossing the incisure onto the next succeeding segment.

Head, seen from above, about one-fourth longer than its width across the eyes (173:140), the eyes slightly longer than wide (50:45) and narrower than the interocular space (45:53); vertical height of an eye one-half greater than its dorsal width (75:50). Vertex with a short median groove not surpassing the middle of the eyes; postocular groove deep; ocelli placed on a rounded elevation, directed upward. Lengths of antennal segments I-IV, 115:308:250:190 (the lengths of the last two segments approximate). Genae rounded at the tips, not prominent. Jugae as seen from above parallel and contiguous, their tips obtusely pointed and sometimes lightly divergent, about as long as the antenniferous tubercles; when seen from the side they reach the middle of the antero-ocular part of the head and their anterior edge is nearly vertical (Fig. 2). Head above with a single seta near each eye, the genae (especially toward the tips), tylus and rostrum sparsely long pilose.

Pronotum one-fourth shorter than its width between the tips of the humeral spines (250:330), the anterior margin (including the prominent subacute anterior angles) less than half as wide as the head across the eyes (60:140). Anterior lobe two-thirds as long as the posterior one, its lateral margin with a distinct tubercle behind the middle and with one or two smaller nodules in front of this; discoidal spines erect at the base, curved outward and slightly backward, two-thirds longer than the humeral spines (63:38), the latter rather stout, directed outward and backward. Posterior lobe coarsely rugulose-punctate, the wrinkles subtransverse on the anterior part, very irregular behind the middle; interlobular sulcus bridged by two rather indistinct earinae which are evanescent before the middle of the posterior lobe, the latter with a narrow, shallow, longitudinal groove each side midway between the middle line and the lateral margin. Scutellar spine about two-fifths longer than the scutellum itself (90:63), sharp-pointed, oblique in one specimen at hand, almost horizontal in the other, the tip lightly decurved. Costal margin of the corium distinctly but not deeply sinuate, thickly set with short, curved, pale silvery hairs toward its base.

Spongy fossa of the front tibia almost one-third as long as the tibia (100:338), that of the middle tibia slightly shorter (90:325). Femora and tibiae with many long setae on all sides, the fore and middle tibiae with additional rows of setae beneath which are longer than the thickness of the tibia, and with a single row of rather close-set teeth along the lower margin; fore and middle femora with two rows of much more widely separated teeth of various sizes, one or two of which are definitely spiniform.

Venter transversely rugulose on all segments from the inner edge of the connexivum to the median carina, the latter extending to the apex of the sixth segment (δ). Apical angles of segments 3 to 5 slightly prominent and more or less acute, those of the second segment with a short acute spine.

Types.—Holotype ♂, and ♂ paratype, Magdalena District, Rio Frio, Colombia, May 5, 1926, collected at light (F. W. Walker).

This species would seem to have a very striking superficial resemblance to *Z. salyaratoides* Lent and Wygodzinsky 1947, which is known to me only from the description and the figures. They are the smallest species known in the genus, and both have similarly banded legs and somewhat similar markings on the hemelytra. *Z. multinctus* seems separable from the other by the annulate antennae, the form of the jugae as seen from the side, the presence of the tubercle on the lateral margin of the anterior pronotal lobe, the humeral spines shorter than the discoidal spines, the scutellar spine banded with fuscous, the color of the venter, the much longer ventral carina, and certain details of the hemelytral pattern.

***Pothea venatrix*, new species**

Male.—Length, 15.8 mm.; width of pronotum 3.8 mm.; width of abdomen 5.0 mm.

Shining, testaceous, tinged with reddish on the lateral portion of the posterior pronotal lobe, the disk of the venter, and to a lesser degree on the anterior margins of the propleura. Antennae and hemelytra black, the base of the corium and a vitta extending along the costal margin from the base about to its middle, flavotestaceous. Pronotum with two spots on the anterior face of the anterior lobe, the transverse interlobular impression, and two vittae on the posterior lobe, joining the transverse band in front and somewhat divergent behind, fuscous or piceous to black. Tips of the antenniferous tubercles embrowned. Scutellum pitchy black, the elevated portions more or less flavous. Dorsum of the abdomen red, the apex piceous; connexivum yellow, the last three segments with a large brown spot within (almost concealed beneath the hemelytra), the preceding segment with a much smaller, almost obsolete spot. Venter reddish testaceous, the lateral margins yellow, segments 3 to 7 each with a large piceous spot at each side, these spots confluent to form an irregular longitudinal inframarginal vitta, segments 4 to 7 also with a narrow piceous transverse basal fascia abbreviated at the sides and more or less interrupted at the middle; male genital segment piceous, with a small flavous spot each side. Pleura piceous (except the anterior margin of the propleura), the acetabula with a rather large flavous spot. Legs brown, the coxae, trochanters and bases of the femora flavous, the femora also with a rather indistinct yellowish pre-apical spot beneath. Femora with a few golden hairs above at the extreme apex; tibiae beneath with long decumbent golden hairs on much of their length, these hairs densely covering the apical part of the tibia on the sides as well as below; tarsi testaceous, hairy beneath, the last segment infuscated at the tip.

Head one-third longer than the pronotum (370:277), nearly as long

as pronotum and scutellum together (370:408), the ante-ocular part to apex of tylus about one-half longer than the postocular part (190:131), the preocular length to apex of antenniferous tubercles almost one-half greater than the length of an eye as seen from above (88:60). Eyes very prominent, somewhat longer than wide (60:50), the interocular space becoming convex anteriorly, one-half wider than an eye (75:50). Tylus cariniform, without trace of a tooth, not angulate when seen from the side. Lengths of antennal segments, 170:330:138:95: (others missing). Vertex shallowly depressed transversely behind the eyes, then slightly elevated to form the ocelliferous tubercle which is distinctly transverse; head, seen from the side, sharply declivous behind the ocelli. Centers of the ocelli placed four-fifths the length of an eye (48:60) behind a line drawn between the hind angles of the eyes. Sides of the head (seen from above) roundly and rather abruptly narrowed behind the eyes (much as in *P. maculata* as figured by Champion), the neck short, cylindrical, a little thicker than the width of the interocular space (85:75).

Anterior lobe of the pronotum gibbous, vertical in front or nearly so, distinctly shorter than the posterior lobe (120:157), the median impression obsolete anteriorly, visible there only as a faintly impressed line; anterior angles nodose, visible from above. Interlobular sulcus coarsely rugose-punctate, as also a longitudinal impression at each side extending the entire length of the posterior lobe; humeral angles rounded, thick; posterior angles obsolete; posterior margin very lightly convex before the scutellum.

Type.—Holotype ♂, Tela, Honduras, May 26, 1923, collected on the Dakota Farm of the United Fruit Company, where it was swept from luxuriant herbage in a depression among banana plants (T. H. Hubbell).

This species is very near *Pothea bivittata* Champion, from which it can be distinguished by its non-annulate femora. It also differs in having the head abruptly and roundly narrowed behind the eyes, in having the ocelli set farther behind the eyes, and in the longer second rostral segment.

I have before me a male specimen which I identify as *P. bivittata*, taken by Dr. Hubbell in the Guaimas District at Tela, Honduras, May 10, 1923, which was found at night on a palm leaf a few inches above the ground. Dr. Hubbell's notes state that this bug moves very rapidly. In this specimen the proportions of the first four antennal segments are 163:280:113:95, and of the rostral segments 178:100:60. The ocelli lie at the sides of a globular elevation, and their centers are only half the length of an eye behind a line drawn between the hind margins of the eyes. The dark markings of the pronotum are less developed than in the unique female type described by Champion, those of the anterior lobe being reduced to a pair of large spots anteriorly and a pair of small oblique

ones just before the interlobular sulcus, and the dark spot of the posterior lobe is divided into two by a median pale vitta. The tylus, seen from the side, is distinctly angulate but scarcely denticulate.

REFERENCES

- Champion, G. C. 1897-1901. *Biologia Centrali-Americana*. Rhynchota Hemiptera-Heteroptera. Vol. 2.
- Lent, Herman, and Petr Wygodzinsky. 1947. Notes on some assassin bugs of the genus *Zelurus* from the collections of the United States National Museum. *Proc. U. S. Nat. Mus.* 97(3217): 343-349, pls. 4-7.
- . 1951. Estudos sobre o gênero "*Zelurus*" Hahn (Reduviidae, Hemiptera). *Rev. Brasil. Biol.* 11(1): 1-28, 43 figs.

BOOK REVIEW

THE APHID GENUS PERIPHYLLUS (FAMILY APHIDAE), A Systematic, Biological, and Ecological Study, by O. E. Essig and Frieda Abernathy. 166 pages, colored frontispiece, 43 text figures, bibliography. University of California Press, 1952. \$3.00.

The title gives an accurate picture of the contents of this important contribution to the understanding of a biologically complex and unusual group of aphids. The volume treats the genus, and 10 species of Nearctic and Palearctic distribution giving detailed life histories observed by the writers, for three of them. The carefully prepared drawings of the numerous stages, forms, and their individual structures will prove invaluable to students of the group even though many of the illustrations are not reproduced in a completely satisfactory manner. Of special interest are the symbols based on the conventional male and female signs, that were originated by the authors and are used to designate numerous distinct forms. The association of a common name with each scientific one, a practice seldom followed in works of this nature, doubtless will be commended by many persons.

The volume has one pictorial key but does not contain written, couplet-type keys, an index, or a generic diagnosis, items whose inclusion would have contributed to the usability and completeness of the book. It contains such a wealth of information on various phases of the included insects, however, that it is a must for the aphidologist and is of more than usual interest to all persons inquiring into remarkable phenomena of insect development.—LOUISE M. RUSSELL, *U. S. Bureau of Entomology and Plant Quarantine*.

ENTOMOLOGICAL SOCIETY OF WASHINGTON 625TH REGULAR MEETING, MARCH 5, 1953

The Entomological Society of Washington held its 625th regular meeting on Thursday, March 5, 1953 in room 43 of the U. S. National Museum, attended by 39 members and 18 visitors. President W. H.